In the claims:

1. (currently amended) A method of optimization of adjustable parameters of at least one machine, comprising the following steps:

providing a data processing system, wherein the data processing system is a diagnosis system;

optimizing adjustable parameters by processing of at least one process algorithm provided in the data processing system;

selecting the process algorithm to be processed from a plurality of process algorithms;

proposing or automatically selecting a process algorithm by the data processing system depending on data selected from the group consisting of machine-internal data, machine-external data, and target data;

using an adjustable parameter to be optimized, a further parameter and an internal expert knowledge as the machine internal data;

defining situation patterns for the process algorithms by at least a part of data selected from the group consisting of machine-internal data, machine-external data, target data and combinations thereof;

selecting a situation pattern which comes at least close or is identical to an instantaneous situation pattern and a process algorithm linked to the situation pattern, depending on the at least one part of the machine-interior data and machine-exterior data with consideration of the target data which defines at least a part of an instantaneous situation pattern;

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processing the machine-internal data and machine-external data by the data processing system in consideration of the target data;

generating further-processible output data;

obtaining optimized adjustable parameters; and

using the optimized adjustable parameters for indication to an operator or for adjustment of the at least one machine.

2.   (previously presented) A method as defined in claim 1; and further comprising the step of determining the optimization of the adjustable parameters by target data selected from the group consisting of editable target data and storable target data.

Claims 3-4 cancelled.

5. (previously presented) A method as defined in claim 1; and further comprising the steps of editing and storing the machine-internal data, the machine-external data and the output data by the data processing system.

6.   (previously presented) A method as defined in claim 1; and further comprising the step of operating the data processing system in a time controlled manner.

Claim 7 cancelled.

8. (previously presented) A method as defined in claim 1; and further comprising the step of using a traveling speed, a rotary speed of at least one threshing drum and/or the rotary speed of a blower of at least one cleaning device as the adjustable parameters to be optimized.

9. (previously presented) A method as defined in claim 1; and further comprising the step of using a crop-specific and/or machine-specific parameter as the further parameter; and performing the determination of the further parameter by sensors which are in operative communication with the machine or by inputting.

10. (previously presented) A method as defined in claim 9; and further comprising the step of using a parameter selected from the group consisting of a grain loss, a grain throughput, a crop moisture, a crop total throughput and a broken corn portion as the further parameter.

11. (previously presented) A method as defined in claim 9; and further comprising the step of using adjustment regions for parameters of working units of the machine as the further parameter.

12. (previously presented) A method as defined in claim 5; and further comprising the steps of generating the machine-external data by external systems and using plant-specific data, geographic data, weather data and/or external expert knowledge as the machine external data.

13. (previously presented) A method as defined in claim 12; and further comprising the step of using crop and/or data and experience knowledge as the external expert knowledge and as internal expert knowledge.

14. (previously presented) A method as defined in claim 1; and further comprising the step of processing a diagnosis selected from the group consisting of process diagnosis, case diagnosis, and model-oriented diagnosis with the at least one process algorithm of the data processing device .

Claims 15-17 cancelled.

18. (previously presented) A method as defined in claim 1; and further comprising the step of generating changed process algorithms by the data processing system depending on machine-interior data and machine-exterior data and with consideration of changeable target data.

19. (previously presented) A method as defined in claim 1; and further comprising the step of generating changed situation patterns by the data processing

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system in dependence on machine-interior data and machine-exterior data and with consideration of changeable target data.

20. (previously presented) A method as defined in claim 1; and further comprising the step of storing process algorithms, situation patterns or both in data sets, wherein the data sets include at least a part of machine-internal data, machine-external data and target data.

21. (previously presented) A method as defined in claim 1; and further comprising the step of incorporating in data processing system situation patterns and associated process algorithms and/or optimized adjustable parameters to be available for further machines.

22. (previously presented) A method as defined in claim 1, wherein the machine is an agricultural harvester; and further comprising the step of determining at least one process algorithm depending on harvesting conditions of the agricultural harvester.

23. (previously presented) A method as defined in claim 1; and further comprising the step of adapting the processing algorithm by analysis and evaluation.